APPENDIX #2

VIRGINIA GIS REFERENCE BOOK

General Application Name: **SCHOOLS**

Product / Service / Function Name: **STRATEGIC PLANNING / CAPITAL NEEDS FOR SCHOOL LOCATIONS**

P/S/F Description: School facility point locations and strategic planning associated with meeting capital needs of schools.

Product / Service / Function

1. Spatial Data –
   Minimum Requirements – Road centerlines, Census block data
   Optional Requirements – Hydrography, building locations

2. Attribute Data –
   Minimum Requirements –
   - Road Centerline Attributes: Street names, City
   - Census block data Attributes: Demographic and population data as provided by the US Census Bureau in the TIGER files.

   Optional Requirements –
   - Road Centerline Attributes: Address ranges

3. Data acquisition Options (integrated with VBMP digital orthos)
   - Data may already exist in database format (i.e. Excel, Access, Text File), as an AutoCAD file or in a GIS format.
   - Appropriate agencies should be contacted to see if such data exists and in what format. Existing data can be converted to the appropriate GIS format.
   - If data does not exist, it can be created through editing techniques in GIS. The original information must first be collected from the appropriate individual associated with the data of interest. The information then can be converted to GIS format.
   - Techniques used for data development can include heads up digitizing using digital orthophotography when appropriate in regards to scale. Building locations can be picked up with imagery, as well as major hydrographic features.

4. Data conflation Options (integrated with VBMP digital orthos)
   If school point locations already exits, digital orthophotography may be used to conflate the locations to represent a more accurate spatial location.

5. GUI / programming options

Not Applicable

6. Internet Functionality and options
   Not Applicable

7. **Minimum Technical Requirements** –
   - ArcView 3.x or
   - ArcGIS
   - Computer with 1GHz processor, 256 MB RAM, 20GB hard drive
   - Trained GIS personnel

   Optimum technical requirements -
   - Computer equipped with 2 GHz processor, 512 MB RAM, 40 GB hard drive.
   - ERDAS Imagine
   - Full-time GIS Analyst

8. Administrative/Management Requirements
   Tasks associated with a strategic capital needs project for schools will depend on the specific goals of the project as determined by the locality. Some tasks that may be involved include:
   - Development of the needs and goals of the project.
   - Project Coordination and Planning
   - Data Collection
   - GIS Data Development
   - GIS Application Development

9. Cost – Cost/Benefit
   The benefits associated with the development of this data would be that this data plays an important role in other projects associated with citing new schools, school districting and with demographic and community analyses. It allows for the integration of data important in the planning of needs for schools.
   The cost ranges below are highly variable. Cost is dependent on such things as size of the locality, desired application functionality, required scale and accuracy of the data, existence and completeness of data, acquisition methods employed, system set up and training.
   Cost may reflect the following ranges:

Project Coordination and Planning	$5,000 to $50,000
GIS Data Development	$20,000 to $150,000
Application Development	$5,000 to $60,000

10. Standards / Guidelines Summary
    A structured and consistent data model should be developed for each data set. Data needs to be compiled from a reliable, accurate source. Data compiled from 1": 200' and 1": 400' scale digital orthophotography will have spatial accuracies approaching ± 7 to 15 feet respectively. All data should exist in a consonant projection.

11. Startup Procedures/Steps

    Evaluate specific needs and goals of project.
    Evaluate software, training and technical needs of the project.
    Procure specified data as discussed and evaluated necessary by appropriate personnel involved in the project.
    Create data that cannot be directly procured using methods such as heads up digitizing on orthophotography to pick up the data points, geocoding and basic editing methods.
    Create a working GIS project that incorporates all data.
    Run analyses and scenarios for strategic planning needs.
    Create a working application, if necessary, to execute user defined needs of their system.

12. Estimated time line and/or implementation (stand alone) schedule

    GIS Project set up, data development and data procurement can take anywhere from one to 12 months depending on multiple factors, including cooperation, completeness of data, size of locality, specific needs and goals as defined by the locality and work force available for the project.

    - Project Coordination and set up can take upwards of one to several months.
    - GIS Data Development can take one to several months.
    - Application Development can take one month to one year.

13. Best Practice Examples in Virginia

    - City of Richmond Schools redistricting
    - Dinwiddie County Schools Redistricting project

    For further information regarding these projects, please contact Russell Minich at (804) 897-7927.